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September 2017

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MPRA Paper No. 98255, posted 27 Jan 2020 05:08 UTC

Marx reads Quetelet: a preliminary report

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Abstract

Marx's engagement with the work of Adolphe Quetelet has been little noticed and, arguably, even less well understood. Indeed, Quetelet himself is now all but forgotten except by specialists in the history of statistics, despite his being the creator of the notion of the 'average man', ubiquitous in modern discourse. This neglect is unfortunate in the light of another under-appreciated fact, namely the profoundly probabilistic character of Marx's political economy. This is apparent throughout his career, from preoccupation with the issue of chance and necessity in his earliest writings through to the sophisticated statistical arguments in *Capital*. Until very recently it has not been possible to directly assess the influence of Quetelet on Marx's thought. However, this has changed as a result of the recent digitisation and on-line availability of Marx's notebooks. This article presents the first analysis of Marx's excerpts from Quetelet. Although the results are preliminary, it is clear that Marx used Quetelet not only as support for his own historical materialism, but also to sharpen his understanding of statistical concepts as such.

Keywords:

Marx, Quetelet, statistics, classical political economy

1. Introduction

Marx's published works make few specific references to the Belgian polymath Adolphe Quetelet—indeed, these citations may literally be counted on the fingers of one hand. Furthermore, Marx's engagement with Quetelet has been little discussed and, at least in the Anglophone literature, not well understood.¹ ²

Paucity of citation may partly explain this, but a further possible reason is that Quetelet himself is scarcely remembered today. Personal experience suggests that, outside the specialist field of the history of statistics, this is true even of scholars in social science, let alone the general public. Nonetheless, Quetelet can be credited with inventing two concepts that are surely referred to daily by hundreds of thousands, if not millions, of people who have never heard of the man or his career. One is the notion of the 'average man', and the other is the body mass index.³

This neglect is unfortunate in the light of another under-appreciated fact, namely the profoundly probabilistic character of Marx's political economy. This is apparent throughout his career, from preoccupation with the issue of chance and necessity in his earliest writings through to the sophisticated statistical arguments in *Capital*.

Not only are Marx's references to Quetelet few in number, but it must be

¹The most spectacular failure is that of Ian Hacking 2006, whose assessment of their relationship reads:

Marx read the statistics of Engel or Quetelet or Farr with indifference, divining with their aid the underlying laws of society that bind it in a totally nonstatistical necessity.

This assertion (which, if not actually preposterous, at the very least implies radical misreading of Marx) is not backed up by citation, or anything else resembling evidence—most unusually for Hacking, who when dealing with other authors is erudite in the extreme.

²In contrast to the Anglophone reception of this issue, see Horvath's contribution to the Quetelet centenary (1977) and, especially, Vadée's *Marx, penseur du possible* (1992).

³On Quetelet and the body mass index see Eknayan (2007). The term is not Quetelet's; it was coined in a 1972 paper in the *Journal of Chronic Diseases*, and its continued use is controversial.

20 conceded that readers without special information can be forgiven for taking them for *obiter dicta*, passing remarks without direct bearing on their context.

The purpose of the present paper is to refute this notion. Until very recently it has not been possible to directly assess the influence of Quetelet on Marx's thought. However, this has changed as a result of the recent digitisation and
25 on-line availability of Marx's notebooks, which are held by the International Institute of Social History (IISH). The relevant notebooks are Marx (1851), in which he excerpts Quetelet's best-known work, *A Treatise on Man and the Development of His Faculties* (1842), and Marx (1865–66), where he excerpts *Du système social et des lois qui le régissent* (Quetelet, 1848) (hereafter *Treatise*
30 and *Du système*, respectively).

This article presents a first analysis of these excerpts. Although the results are preliminary, it is clear that Marx used Quetelet not only as support for his own historical materialism, but also to sharpen his understanding of statistical concepts as such.

35 We proceed as follows: first, we consider Marx's specific citations of Quetelet and their reception by his English editors, and present evidence to show that he was familiar with the full extent of Quetelet's statistical work. Secondly, we categorise the themes which one might expect Marx to have found of interest in Quetelet for the development of his political economy. Thirdly, we offer a
40 preliminary sketch of how Marx drew on the two Quetelet texts. We end by noting two unexpected themes that attracted Marx's attention.

2. Marx cites Quetelet

By way of introduction to the (mis-)understanding of Marx by some commentators we detail the only instances, of which we are aware, of Marx referring
45 to Quetelet in published work. These are, in chronological order of publication:

- An article in the *New-York Tribune* of February 17–18, 1853, with date-line 'London, Friday, January 28, 1853'. Of the four references to Quetelet, this is the only one to provide (fairly) specific citations to particular texts.

- ‘Parties and Cliques’, in the *Neue Oder-Zeitung*, 8 February 1855.
- 50 • *Capital* volume I, chapter 13, ‘Co-operation’.
- *Capital* volume III, chapter 50, ‘Illusions Created By Competition’.

For reasons that will appear, in the following sub-section we discuss them out of chronological sequence.

The works that Marx has in mind in these references are (i) a publication 55 of 1829 (by inference), (ii) Quetelet’s *Treatise* (1835 in French, 1842 in English translation, with additional Preface by Quetelet; we know from Marx’s notebooks that he read the English translation), and (iii) *Du Système* (again by inference).

2.1. Marx’s citations of Quetelet, and their reception

60 Here we discuss the four Quetelet citations listed above. In the following sub-section we produce evidence that notwithstanding the small number of citations, Marx was familiar with a wide range of Quetelet’s work on social statistics.

2.1.1. The New-York Tribune article

Marx’s article in the *New-York Tribune* is an attack on capital punishment. 65 He begins as follows:

Mr. A. Quételet, in his excellent and learned work, *l’Homme et ses Facultés*, says:

70 There is a budget which we pay with frightful regularity – it is that of prisons, dungeons and scaffolds. . . . We might even predict how many individuals will stain their hands with the blood of their fellow men, how many will be forgers, how many will deal in poison, pretty nearly the same way as we may foretell the annual births and deaths.

75 And Mr. Quételet, in a calculation of the probabilities of crime published in 1829, actually predicted with astonishing certainty, not only the amount but all the different kinds of crimes committed in France in 1830.⁴

‘[E]xcellent and learned’: thus Marx assesses Quetelet in 1853. This is just two years after his close reading of the *Treatise*, cited here, but we must also
80 note that the passage shows Marx to be familiar with earlier work by Quetelet, by inference his *Recherches statistiques sur le Royaume des Pays-Bas* (1829).

2.1.2. *Capital volume III, chapter 50*

Given the positive evaluation of Quetelet just quoted, it is surprising to read the following editorial note by David Fernbach to Marx’s citation of Quetelet in
85 *Capital* volume III (page 1000 in the Penguin edition):

... Marx’s attitude to Quételet [sic], in so far as it can be inferred from a few brief references, is interesting and characteristic: the regularities Quételet demonstrates in social phenomena are *ingenious, but not particularly significant*. Cf. ‘Parties and Cliques’ in *Surveys from Exile*, p. 279. [our emphasis]
90

Fernbach precedes this comment with the remark that Quetelet’s *Treatise* was ‘quite celebrated in its time’, which is a considerable understatement.⁵ The footnote is to Marx’s assertion about market prices of commodities: ‘The same rule of governing averages is found here as Quételet demonstrated in connection

⁴Marx refers to Quételet thus, but although this spelling is used in some editions of Quetelet’s own works it appears not to have been the one used by the man himself, and is not usual among modern authors (although Marx’s editors discussed here follow Marx’s usage). What if any significance attaches to this point of orthography is for the moment not apparent; I am indebted to Alain Alcouffe for enquiries about this among *la francophonie*.

⁵Notwithstanding our criticism above of Hacking (2006) the book convincingly argues for the profound effect Quetelet’s work had on the nineteenth century’s conception of society and social science.

95 with social phenomena' (Chapter 50 deals with 'The illusion created by competition'). Again, we will see below that Marx's decision to cite Quetelet in this context was, *contra* Fernbach, indeed most 'significant' for a proper appreciation of Marx's political economy.

2.1.3. 'Parties and Cliques'

100 We may come to understand Fernbach's misreading of Marx's attitude to Quetelet by exploring the text to which his note refers us, namely Marx's citation in the *Neue Oder-Zeitung*, which begins as follows:

The duration of the present ministerial crisis is more or less normal, as such crises last on average nine to ten days in England. It is astonishing that in his famous work 'The Abilities of Man' [sic], Quetelet
105 manages to demonstrate that the annual total of accidents, crimes, etc., in civilised countries can be determined in advance with almost mathematical accuracy. The normal duration of English ministerial crises in different periods of the nineteenth century is, on the other
110 hand, nothing amazing, for—as is well known—there are always a given circle of combinations to be traversed, a given number of posts to be disposed of, and a given sum of intrigues have to paralyse one another. The only extraordinary thing is the character of the combinations which the dissolution of the old parties necessitates this
115 time.⁶

As we see, Marx is here employing Quetelet's ideas to *satirise* the antics of the British political establishment of the day. The supposedly unlikely predictability of the flux of criminality and misfortune—surely not so astonishing
120 20 years after its first publication—is ironically contrasted with the all-too-predictable cycle of ministerial intrigue.

⁶This article was first published in English in Marx (1973b).

2.1.4. *Capital* volume I, chapter 13

In comparison with Fernbach, Ben Fowkes' footnote on Quetelet in the Penguin edition of *Capital* volume I is more generous and more perceptive:

125 Jacques Quételet (1796–1874) was a Belgian statistician and astronomer. In the 1840s he developed the theory, based on his statistical investigations, that there was an 'average man' who could be derived by applying the theory of probabilities to statistical data. Cf. in particular his *Du Système social et les lois qui la régissent*, Paris, 1848.

130 Fowkes's comment is noteworthy for referring to *Du Système*, rather than to the *Treatise*, given that it was the former which Marx was reading in the period in which he was working on *Capital*. Furthermore, the passage which Fowkes is annotating is in Chapter 13: 'Social labour'.

This reference is a key exhibit in our claim that Marx had a sophisticated 135 grasp of probabilistic concepts and used them at key points in his political economy. Having cited Quetelet, Marx goes on to—in effect—appeal to the central limit theorem to argue that the abstract labour that is represented by the value appropriated by capitalists arises in *collective* production, and can be the more surely counted on by them the larger is the workforce that they 140 employ.

2.2. *Quetelet: 'excellent and learned', or an unfortunate footnote?*

The previous section has demonstrated that despite the impression that might be conveyed by some English-language commentary on Marx and Quetelet, the former was clearly appreciative of the latter, with whose works he was well- 145 acquainted. Moreover we have further evidence of Marx's long-lasting interest in Quetelet from his correspondence with Kugelmann. In a letter to Kugelmann of 3 March 1869 Marx writes:

Quételet is now *too old* for one still to make any sort of experiment with him. He rendered great services in the past by demonstrating

150 that even the apparently casual incidents of social life possess an
inner necessity through their periodic recurrence and their periodic
average incidence. But he was *never* successful in interpreting this
necessity. And he made no progress, but simply extended the ma-
terial for his observations and calculations. He is **today** no further
155 on than he was *before* 1830. [*emphases* in original, mine **thus**]

The significance of the reference to ‘today’ is that 1869 was the year of
publication of the second, enlarged, edition of the *Treatise* (Quetelet, 1869).
Further, we need to consider the context of the passage quoted. This is:

Dear Kugelmann,

160 The damned photographer has once again been leading me by
the nose for weeks, and has still not supplied additional copies. But
I shall not delay this reply longer because of this.

With regard to Herr Vogt, I wished to make sure of those copies
which could still be saved from Liebknecht’s hands (I had sent him
165 300 from London to Berlin, i.e., all those still left) in case they were
needed. I therefore took the liberty of ordering them to be stored at
your place. But Orindur, solve for me this mystery of nature!

Liebknecht sent you just 6 copies, but announced to me that he
had sent 50 copies. Will you please ask him for the answer to this
170 riddle!

Quételet is now too old ... [etc]

It will probably take until the summer before I am finished with
Vol. II. Then – with the manuscript – I shall come to Germany with
my daughter [Jenny] and see you then. Or, to be more precise, shall
175 descend on you.

In France – a very interesting movement in progress. ... [etc]

From the telegraphic nature of Marx’s series of points it appears that
Marx expects to be understood as responding to definite items previously dis-

cussed between the two (although this has yet to be checked against Kugel-
180 mann’s contemporary letters in the opposite direction; apparently not yet digi-
tised by the IISH). One surmises that Kugelman had asked Marx for his opinion
of Quetelet’s latest work. What exactly Marx based his reply on bears further
investigation. His letter was sent in early March, so it would be interesting to
know the exact date of publication of Quetelet’s work. If the letter predates this,
185 one has to suppose that Marx had in mind prior publicity about its contents.

At any rate, Marx’s comments on Quetelet in general—‘he made no progress,
but simply extended the material for his observations and calculations’—might
well serve as a review of the 1869 work: despite its greatly expanded size (503
pages as against 348) Mosselmans (2005) judges that the second edition of the
190 *Treatise* ‘is not very different from the first’ in terms of intellectual substance.

3. Marx reads Quetelet: themes

What would we expect to see Marx finding of interest in Quetelet? More
precisely, what in Quetelet would Marx regard as support for his existing ideas,
and what might strike Marx as novel?

195 In some ways this is an impossible question to disentangle. The French
edition of the *Treatise* came out in 1835, when Marx was 17. Given the book’s
almost instant notoriety we cannot be sure that Quetelet’s influence does not
already show in Marx’s school-leaving essay on the choice of profession, written
that year. There Marx writes: ‘Serious consideration of this choice, therefore,
200 is certainly the first duty of a young man who is beginning his career and does
not want to leave his most important affairs to chance’. He thus departs from
the eighteenth-century Enlightenment view that belief in chance was ignorant
superstition.⁷

⁷In case it is thought that this assessment places too much weight on an item of *juvenilia*,
see van Leeuwen (1972), who argues for not only the wider significance of the school essays
(Chapter 2) but also for the particular claim that Marx was already beginning to transcend
the conventional wisdom of the Enlightenment: ‘These opening sentences contain, of course,

Certainly the idea that differences in social organisation produce measurable differences in social outcomes was well-known ten years later, when Marx translated Peuchet on suicide for a German audience: ‘The annual number of suicides, which is, as it were, normal and recurrent among us, must be regarded as a symptom of the faulty organisation of our society’.⁸

In short, certain general notions—dubbed *Queteletism* by hostile Prussian writers (Hacking, 2006)—were common, if controversial, currency in the period of Marx’s intellectual formation.

Hence it is not very important, although of course it would be interesting, to know what specific engagement Marx had with Quetelet prior to that which is documented by the notebooks. Whether he first encountered *Queteletism* in 1835 or 1842 or 1848 is for present purposes irrelevant; its dawn is exactly contemporary with Marx’s entry on the intellectual stage.

Whatever is the case in respect of particular previous encounters, Marx can be thought of, in 1851 and 1865–6, as reading in formal preparation for the text he was working on, in other words what would become *Capital*. Some of what he read would have been familiar in at least a general way, but would need specific citation in the publication to come. Other material might spark new ideas, or greater development of existing ones.

Thus in the next subsection we begin by reviewing specific themes in Marx’s political economy for which Quetelet might have provided either original inspiration or confirmation. In each case except the first we recall the relevant sources in Marx’s writing.

Social systems are determinate As noted in the introduction to this Section, the view that social systems bring about distinctive outcomes, whether

certain familiar ideas inherited from the Enlightenment?so familiar that they could have been written in the eighteenth century. But Marx elaborates this general theme in a special way, so that the germs of his personal philosophy are already detectable in these reflections.’ (page 26).

⁸A scholarly edition of this is Marx (1999).

in the form of suicide statistics, or the formation of prices through capi-
230 talist competition, is one that permeates the whole of Marx's writing.

Free will Claims about the regularities of crime led to a nineteenth century
furore about 'statistical fatalism': if, as Quetelet claimed, 'It is the so-
cial state ... which prepares these crimes ... the criminal is merely the
instrument to execute them', what room is left for individual agency?

235 Marx solves this problem in the *Grundrisse*:

... as much as the individual moments of this movement [social
and economic life] arise from the conscious will and particular
purposes of individuals, so much does the totality of the process
appear as an objective interrelation, which arises spontaneously
240 from nature; arising, it is true, from the mutual influence of con-
scious individuals on one another, but neither located in their
consciousness, nor subsumed under them as a whole. Their own
collisions with one another produce an alien social power stand-
ing above them, produce their mutual interaction as a process
245 and power independent of them (Marx (1973a), pp.196–197)

Statistical point of view Under this we consider two different but related
sets of ideas about the application of statistics, one conceptual and the
other technical:

Conceptual By this we intend the idea that random variation in phenom-
250 ena is not arbitrary chance, but instead the expression of an inner
reality that can be examined by statistical methods. In Quetelet,
and frequently in Marx, this method is taken to be the mean, or
arithmetic average. We have seen above that Marx specifically cites
Quetelet on this point in connection with social labour and market
255 prices, but he expresses this idea occurs as early as 1847, in *Wage
Labour and Capital* and *The Poverty of Philosophy*.

Technical By this we understand specific discussion of the arguments that justify the use of statistics: the assumption of Gaussian distributions (in the language of the day, the ‘error law’); in connection with this, the need for large samples. Chapter 13 of *Capital* volume I is the prime *locus* for this.

Distributional forms We have argued elsewhere (Wells, 2013) that Marx’s discussion of the formation of social values from individual values in Chapter 10 of *Capital* volume III (pp 283–284) looks very like a verbal description of various probability density functions.

Labour theory of value Marx’s discussion of social labour implies that the abstract labour that is represented by value (Elson, 1979) is a statistic: the expected value of the sum of individual labours exploited by a capitalist.

Note that in what follows we do not attempt an account of every instance, but consider only particularly apposite excerpts.

As a preliminary we note how Marx also quarries Quetelet for data that might usefully illustrate later writings: for example, his notes of statistics on crimes against property and class of criminal on pages 83ff of the *Treatise*.

4. Marx reads Quetelet: quantitative analysis

Classification of these materials is necessarily arbitrary in character for a variety of reasons.

First, although we have picked out some core themes that would have interested Marx, classification of his many excerpts is necessarily subjective (and of course some may bear on more than one theme).

Secondly, the difficulty of making out Marx’s handwriting is notorious; although the task is easier in the case of excerpts, since one has a known text to compare them with, we have yet to fully decipher some of these, and thus the precise extent of the excerpts in question is unclear.

Thirdly, our identification of themes is naturally not exhaustive, and some
285 excerpts do not clearly fit our scheme. Some of these exceptions are dealt with
in our conclusion.

That said, we begin with an attempt at quantification.

Eight pages of the 1851 Notebook contain excerpts from the *Treatise*: 13, 14,
and 36–41 (only 10 lines of the last page; Marx then turns to an examination
290 of Newman’s *Elements of Political Economy*).⁹ For the reasons given above,
distinguishing individual excerpts is somewhat arbitrary, especially since some
are essentially notes of data extending over several pages of Quetelet’s text, but
there are at least 60 excerpts in these eight pages of notes.

In the 1865–6 Notebook there are five pages (274–8) of excerpts from *Du*
295 *système*. The 21 excerpts are taken from 24 pages of Quetelet’s text.

The two sets of notes differ physically; the earlier set, on the *Treatise* (see
Figure 1 on the following page) are notably harder to decipher than those
on *Du système* (Figure 2 on page 15). This later notebook has a different, and
apparently smaller, format than the earlier one, with shorter and more widely-
300 spaced lines that do not have the tendency to wander upwards that is evident
in the earlier notebook.

4.1. *Social systems are determinate*

17 instances in total

From the Treatise. Marx’s notes from 1851

305 14 instances

Pages vii 6 7 23 24 57 79 82–83 85 88–89 92 97 99–102 108

⁹The pagination of Marx’s notebooks is taken direct from the scanned versions available on-
line. That given in the IISH’s on-line index suggests the transition from Quetelet to Newman
is on page 40 of the 1851 notebook, while the entry for the later notebook claims the relevant
pages are ‘336–332’, which appears to be the result of an error in scanning the notebooks; in
the PDF file, notebook pages numbered from 248 onwards appear upside down and in reverse
order. The IISH listing is at <https://search.socialhistory.org/Record/ARCH00860>.

219

A. Quilbet - The système baral et de ses quils
régressifs. (1848. (Guillaumin))

Le système baral est composé, quand on se
 livre à observer les individus, de la série des de tous simples
 de son action, quand on considère un très-grand nombre
 d'individus. (Préface) Comme nouvelle n'a pas pour objet d'étudier
 l'état dans ses divers degrés d'organisation, de plus l'état individuel
 lequel a été l'état de combinaison le plus élevé qui
 comprend l'humanité tout entière. (Ici) 2 figures montrant d'abord
 les effets sans une base de nouvelles choses arrivées
 dans les conditions, et que, par suite, l'état s'en trouve
 déterminé dans son esprit. (14, 15)

Les causes accidentelles - chaque chose est soumise à des fluctuations
 dans... [l'état individuel par suite de l'effet, de l'effet, de l'effet, de l'effet, de l'effet]
 - Variations - Les variations qui résultent sous l'influence de causes
 accidentelles, sont réglées sur une même loi, qui peut
 se classer d'avance numériquement et par ordre de grandeur
 des fluctuations entre lesquelles elles s'accroissent. (17)

non seulement les individus de la série... [l'état individuel par suite de l'effet, de l'effet, de l'effet, de l'effet, de l'effet]
 mais aussi par conséquent les séries accidentelles dépendent
 de leur état par les causes accidentelles. (19)

Figure 2: Marx's notes on *Du système*; first page.

From Du système. Marx's notes from 1865/66

3 instances

Pages 14–15 88–89 92

310 4.2. *Free will*

4 instances in total

From the Treatise. Marx's notes from 1851

Pages 22

From Du système. Marx's notes from 1865/66

315 Pages ix 69–70 96–97

4.3. *Statistical point of view*

8 instances in total; some address both conceptual and technical aspects

Conceptual. Five instances

From the Treatise. Marx's notes from 1851

320 Pages vii

From Du système. Marx's notes from 1865/66

Pages xii 16 19 91

Technical. Four instances

From the Treatise. Marx's notes from 1851

325 Pages 5 7 74

From Du système. Marx's notes from 1865/66

Pages 19

4.4. *Distributional forms*

1 instance in total

330 *From the Treatise.* Marx's notes from 1851

Pages nil

From Du système. Marx's notes from 1865/66

Pages 19

4.5. *Labour theory of value*

335 1 instance in total

From the Treatise. Marx's notes from 1851

Pages 73

From Du système. Marx's notes from 1865/66

Pages nil

340 **5. Marx reads Quetelet: the excerpts**

Full analysis of the excerpts remains to be completed; here we provide only particularly noteworthy or characteristic examples.

5.1. *Social systems are determinate*

345 As with Marx, so with Quetelet; this idea is ubiquitous, and Marx notes many instances, in particular:

From the Treatise. Marx's notes from 1851

350 **page vii** Now, what do these facts teach us? I repeat, that in a *given state* of society, *resting* under the influence of certain causes, regular effects are produced, which oscillate, as it were, around a fixed mean point, without undergoing any sensible alterations.

Marx's emphasis here shows his interest in historical/social determination of life – but he also notes the statistical viewpoint: ‘effects are produced ... which oscillate ... around a fixed mean point’.

page 6 Marx notes Quetelet's claim about the annual budget claimed by the scaffold, quoted by him in his *New-York Tribune* article, followed by the
355 notorious assertion that 'the criminal is merely the instrument'.

From Du système. Marx's notes from 1865/66 ¹⁰

pages 88, 89, 92 *Il suffirait, sans doute, de modifier les causes qui régissent notre système social, pour modifier aussi les résultats déplorables que nous lisons annuellement dans les annales des crimes et des suicides.*
360

It would suffice, perhaps, to change the causes that govern our social system to also change the deplorable results we read annually in the annals of crimes and suicides. (page 88)

il faut agir sur les masses et non sur quelques individus qui en font partie.
365

it is necessary to act on the masses and not on a few individuals among them (page 89)

que les faits sociaux ne peuvent rester les mêmes qu'autant que la société reste sous l'influence des mêmes causes.
370

social facts cannot remain the same unless society remains under the influence of the same causes (page 92)

5.2. Free will

From the Treatise. Marx's notes from 1851

page 22 This is both conjectural and, if sustainable, an excerpt that perhaps
375 runs counter to what we take to be Marx's own attitude. The actual excerpt reads

¹⁰Here and elsewhere translations from *Du système* are by the present writer.

380 The criminal documents of France inform us of an equally curious circumstance, namely, that the period of the maximum of conceptions nearly coincides with that of the greatest number of rapes.

But immediately following this sentence Quetelet continues

385 M. Villermé rationally remarks, that this coincidence may lead us to think that *those who are guilty, are sometimes obliged in an irresistible manner, not having the free command of the will.* (emphasis added)

It is difficult to imagine that Marx overlooked this second sentence, but for whatever reason he chose not to record it.⁴

From Du système. Marx's notes from 1865/66

390 **page 97** *le libre arbitre, bien loin de porter obstacle à la production régulière des phénomènes sociaux, la favorise au contraire. Un peuple qui ne serait formé que de sages, offrirait annuellement le retour le plus constant des mêmes faits*

395 free will, far from obstructing the regular production of social phenomena, instead favours it. A people composed only of sages would offer the most constant return of the same facts each year

5.3. Statistical point of view

5.3.1. Conceptual

From the Treatise. Marx's notes from 1851

400 **page vii** Already noted above, in connection with the determinateness of social systems

From Du système. Marx's notes from 1865/66

page 91 *le retour constant des mêmes faits, qui ne peut avoir lieu sans la destruction des effets des causes accidentelles; or, cette*
405 *destruction s'opère effectivement, toutes les années, de la même manière.* (Marx's emphasis)

the constant recurrence of the same facts, which cannot have taken place without the *destruction of the effects of accidental causes*; therefore this destruction operates effectively, every
410 year, in the same manner

As we have seen, Marx had already arrived at (indeed, had arguably gone beyond) this view in preparing the *Grundrisse*.

5.3.2. *Technical*

From the Treatise. Marx's notes from 1851

415 **page 7** although the tables of mortality teach us no direct application to an individual, yet they offer very certain results when applied to a great number of persons; and upon these general results, assurance societies calculate their annual profits

One imagines Marx's attention sharpening at the appearance of the word
420 'profits'; this also lends support to the contention that Farjoun and Machover's probabilistic '*dissolution*' of the transformation problem (1983) is not amending but recovering Marx's full conception.

From Du système. Marx's notes from 1865/66

page 19 Marx's precise excerpt from the following passage is hard to decipher,
425 but the final phrase emphasized here is definitely in his notes:

en supposant un nombre d'observations suffisamment grand, l'homme moyen, à chaque âge, se trouverait placé entre deux groupes d'individus également nombreux, les uns plus grands, les autres

430 *plus petits que lui. De plus, les groupes se distribueraient de la*
manière la plus régulière d'après l'ordre des tailles. Les groupes
les plus nombreux sont ceux qui s'écartent le moins de la moyenne:
à mesure que les écarts deviennent plus forts, les groupes d'hommes
qui les présentent sont plus faibles; et, vers les limites extrêmes,
les géants comme les nains sont très-rares; il ne faut pas néanmoins
435 *considérer ces derniers comme des anomalies, ils sont nécessaires*
pour compléter les séries ascendante et descendante déterminées
par la loi des causes accidentelles

By supposing a sufficiently large number of observations, the
average man, at each age, would be placed between two groups
440 of individuals equally numerous, some larger and others smaller
than him. Moreover, the groups would distribute themselves
in the most regular manner according to the order of the sizes.
The largest groups are those which deviate the least from the
average: as the deviations become stronger, the groups of men
445 who represent them are smaller; and, towards the extreme lim-
its, the giants as well as the dwarfs are very rare; they must
not be regarded as anomalies, they are *necessary to complete*
the ascending and descending series determined by the law of
accidental causes

450 Taken as a whole, this passage is the 'error law' (the normal or Gaussian
distribution) in a nutshell.

5.4. Distributional forms

From the Treatise. Marx's notes from 1851

nil So far we have not traced any relevant note by Marx from the *Treatise*.

455 *From Du système.* Marx's notes from 1865/66

page 19 As discussed immediately above, Marx noted Quetelet's description
of the Gaussian distribution.

It is very tempting to suggest that Marx consciously adapted it for his discussion of skewed distributions in *Capital* Volume III. What one would like to be able to pronounce on is whether this was entirely his own creative act, or
460 whether he might have found external inspiration for this.

As it happens, there is a diagram in *Du système* (reproduced as Figure 3) that might have provided such inspiration, namely that comparing the propensity to marriage of men and women at different ages.

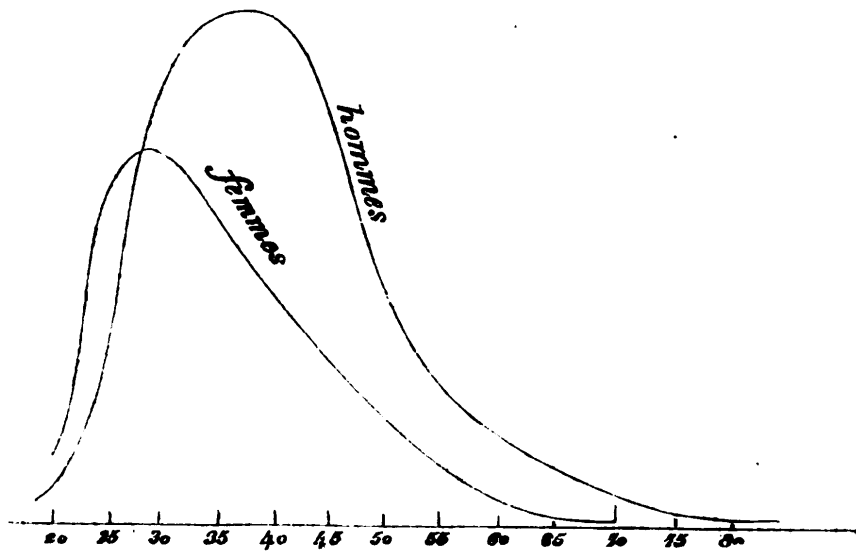


Figure 3: The propensity to marriage, plotted by Quetelet on page 80 of *Du système*.

465 There is no sign in Marx's excerpts of his having noticed this figure, but he did excerpt passages from pages shortly before and after it (76 and 88), and he was a diligent reader, so it seems fair to assume that he did see it. (Similar comments apply to the diagram on page 93 of what is apparently intended to be a symmetrical distribution; Marx noted passages from pages 92 and 96.)

470 *5.5. Labour theory of value*

From the Treatise. Marx's notes from 1851

pages 73 and 74 Here Quetelet introduces his proposals for measuring the ‘moral and intellectual qualities’ of man. Unfortunately Marx’s notes are particularly hard to decipher here, but it appears that they include sentences and phrases from about three-quarters of the text on this page,
475 including certainly the first and final paragraphs of the following:¹¹

Certain moral qualities are very analogous to physical ones; and we may value them, by admitting that they are proportioned to the effects which they produce. Thus, we cannot hesitate to say that
480 one operative has twice or thrice the activity of another, if, all things being equal, he performs double or triple the amount of labour which the other one does.

Here the effects are purely physical, and like the compression of the spring in the estimation of mechanical forces: we have only to admit
485 the hypothesis that causes are proportioned to the effects produced by them.

But in a great number of cases, this appreciation becomes impracticable. When the activity of man is exerted on immaterial labours, for example, what standard can we adopt, except the works, such
490 as books, statues, or paintings, produced? for how can we obtain the value of the researches and thought which these works have required? The number of the works can alone give an idea of the productive power of the author, as the number of children brought into the world gives us the fecundity of a female, without taking into
495 account the value of the work produced.

If, like the fecundity of females, the different qualities of men were manifested by deeds to which we could assign a value, we conceive that these qualities might be appreciated and compared with each

¹¹Paraphrased here for convenience of exposition; the original text forms part of a single paragraph.

other.

500 The rest of page 73 is devoted to speculation as to how one might produce relative scales (but not absolute measures) of courage, propensity to crime and other qualities, while on page 74 we find Marx making the following excerpt (not including the footnote at *):

505 we may employ numbers in the following cases, without any imputation of absurdity:

1. When the effects may be estimated by means of a direct measure, which gives their degree of energy, such as those produced by strength, speed, and activity, applied to material works of the same nature.*

510 2. When the qualities are such that the effects are almost the same, and in a ratio with the frequency of these effects, such as the fecundity of females, drunkenness, &c. If two men, placed in similar circumstances, became intoxicated regularly, the one every week, and the other twice a-week, we should say that their propensity to intoxication was as 1 to 2.

515 3. Lastly, we may also employ numbers, when the causes are such that it is necessary to pay as much attention to the frequency of the effects as to their energy, although the difficulties then become very great, and indeed sometimes insoluble, owing to the few data at present possessed by us . . .

520 It would be impossible, when comparing two men, the one between 21 and 25, and the other between 35 and 40, to determine, all things being equal, their degree of proneness to theft, or any other crime, for this proneness may not have been disclosed, even in one single action, in the course of the observations; which is no longer the case

525 when we take all men, collectively, of the same age: the number of acts or effects is then great enough to allow us, without any serious

error, to neglect the different degrees of energy of these acts. Again,
if we find that the number of crimes remains nearly exactly the same,
530 from year to year, it is very probable that the result obtained will
not be far from the truth.

Here we see Quetelet, and with him, Marx, moving from cases where the
effects of activity can be quantified and directly associated with the labour
input required, to cases where quantifiable effects can only be attributed to
535 causes by inference.

These notes were taken in 1851. As recently as 1847 Marx had been writing—
in *Wage Labour and Capital* (Marx, 1952)—of workers selling their *labour* as
opposed to their *labour-power*. Here, perhaps, we see him moving from a concep-
tion of exploitation based directly on individual concrete labour to the statistical
540 one based on abstract social labour that we discussed in Section 2.1.4 on page 7.

From Du système. Marx's notes from 1865/66

nil As yet, we have found no relevant excerpts in Marx's notes from *Du système*.

6. Marx reads Quetelet: two surprises

So far we have concentrated on the ways in which Marx's reading of Quetelet
545 informed the development of his critique of political economy. We now turn to
two ways in which Marx's notes demonstrate unexpected connections with his
thought in general and, perhaps, on his personal life.

6.1. 'Of the Average Man considered with reference to Literature and the Fine Arts'

550 The Section heading is that given by Quetelet to the first section of Chapter I
of Book IV of the *Treatise* (Book IV is titled 'Of the properties of the average
man, of the social system, and of the final advancement of this study', and
Chapter I is 'Properties of the average man'.) Among Marx's excerpts from
this section are

555 The necessity of veracity in faithfully representing the physiognomy,
the habits, and the manners of people at different epochs, has at all
times led artists and literary men to seize, among the individuals
whom they observed, the characteristic traits of the period in which
they lived; or, in other words, to come as near the average as possible.
560 (page 96)

As for ancient subjects, the artist or the poet who wished to re-
produce them might constrain us to admire his art; but we should
always feel that he placed a nature before our eyes, which, so to
speak, was dead—a type which is extinct (page 97)

565 Compare Marx in the ‘Introduction’ to the *Grundrisse*:

Greek art presupposes Greek mythology, i.e. nature and the social
forms already reworked in an unconsciously artistic way by the pop-
ular imagination. . . . But the difficulty lies not in understanding
that the Greek arts and epic are bound up with certain forms of
570 social development. The difficulty is that they still afford us artistic
pleasure and that in a certain respect they count as a norm and as
an unattainable model.

A man cannot become a child again, or he becomes childish. But
does he not find joy in the child’s naïveté . . . The Greeks were normal
575 children. The charm of their art for us is not in contradiction to the
undeveloped stage of society on which it grew. [It] is its result,
rather, and is inextricably bound up, rather, with the fact that the
unripe social conditions under which it arose, and could alone arise,
can never return.

580 In other words, Greek art represents ‘a type which is extinct’, in Quetelet’s
words.

6.2. 'Of births in general, and of fecundity'

Once again we take a title from Quetelet, this time from Chapter I of Book I ('Development of the physical qualities of man'). Given Marx's antipathy to
585 'Parson Malthus' and his theories of population one might well expect him to take an interest in this part of Quetelet's work, and indeed we find him noting data on births and deaths, and their possible connection with national prosperity, throughout Book I.

Nonetheless, what are we to make of his taking a close interest in Quetelet's
590 claims about the ratio of male births to female ones (pages 12 and 13)—in particular that:

when the mother is older than the father, fewer boys than girls are
born; the same is the case when the parents are of equal ages; but
the more the father's age exceeds that of the mother, so is the ratio
595 of boys greater (pages 12–13)

The point, of course, is that Jenny von Westphalen was four years older than Marx; also, it is well known that although Marx loved his daughters he also wished for sons. (In 1855, after the birth of his fourth daughter, Eleanor, Marx wrote to Engels 'my wife was delivered of a bona fide TRAVELLER—
600 unfortunately of THE 'SEX' *par excellence*. If it had been a male child, well and good'.)

Moreover in 1851, when Marx was so engaged with Quetelet, questions of births and infant mortality engaged his household deeply. The previous autumn Guido, the Marxes' second son (and fourth child) had died in infancy
605 (Henry Edward Guy Marx, 5 September 1849–19 November 1850). At the same time, Jenny was pregnant with their third daughter, Franziska (Jenny Eveline Frances Marx, 28 March 1851–14 April 1852). Not only that, but the Marxes' housekeeper was also pregnant—with a child (Frederick Demuth, 23 June 1851–28 January 1929) whose father is widely supposed to have been Marx.

610 7. Conclusion

We have demonstrated, *contra* Fernbach, not only that Marx found Quetelet's work 'ingenious' but also that the attention he paid to it can be mapped to key themes in his political economy. More work needs to be done in analysing Marx's excerpts in relation to his own work, and also to consider to what extent the
615 themes that Marx took from Quetelet were typical of the latter's thought, or otherwise. For example, a topic that we have not attempted here is the extent to which the data that Marx quarried from Quetelet in fact showed up in his published work.

But previous to this it will be necessary to complete the task of identifying
620 the precise extent of Marx's excerpts, and properly identifying their place within Quetelet's text.

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